Attachment 4 – Form 430.01 Radiological Control Design Review

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Rev. 01

RADIOLOGICAL CONTROL DESIGN REVIEW

Radiological Engineer: R. W. Kanady Date: 8-15-01

Project Design Title: WAG 1 OU1-10 Interim Sludge Storage Facility Design for TAN-607 Warm Shop

Project Manager: A. Jantz

Required form (or equivalent) for Title I design review of facility designs/modifications associated with handling, processing, or storage of radioactive material.

1. The original of this form shall be filed in the original project file. RadCon offices should retain a file copy as documentation of the review.
2. Use the checklist (yes/no/na) to identify issues that have been evaluated and comments to resolve concerns.

Yes	No	N/A		
☒	☐	☒	1.	Have optimization methods/cost-benefit analysis been applied to the facility design to ensure that occupational radiation exposure is maintained ALARA?
Comment: See Item #11.				
☒	☐	☐	2.	Have sufficient engineering controls for radiation protection been incorporated into the design to prevent undue health and safety risks to plant personnel, the public and the environment?
Comment: See Item #12.				
☒	☐	☐	3.	Are radiological control concerns such as access/egress controls, contamination control barriers and containments, and radiation control boundaries addressed in the facility design?
Comment: This is a temporary modification to an existing facility at TAN anticipated to last approximately one year. Considered and incorporated into the controls are the following: the facility will have positive key control for entry per the WGS RCRA storage requirements; radiological postings will be established prior to the storage process commencing; and a leakproof floor barrier of HDPE with a berm will be installed for leak control purposes.				
☒	☐	☐	4.	Have specific control devices for reducing occupational radiation exposure such as, shielding, HEPA filtered hoods, glove-boxes, equipment containments, interlocks, barricades, shielded cells, installed decontamination systems, and remote operations been evaluated and used to the maximum extent practical?
Comment: The use of specifically designed shielded overpacks for the 55 gallon drums containing the V-tank sludge material during storage has been addressed in the V-Tank Waste Management Plan (WMP) , Appendix E. The overpack drums will be manufactured and provided by GTS Duratek per configuration controlled and approved drawings. To further support maintaining area dose rates ALARA concrete shield blocks will be oriented per drawings incorporated into the WMP. The use and placement of the concrete shield blocks will require control per MCP-366, Use and Control of Temporary Shielding. In the event that radiological conditions should change from those anticipated during the design process such that placement of additional shielding (i.e., shield blankets on the drums) is required than control requirements per MCP-366 will also be applicable.				
☐	☐	☒	5.	Does the ventilation system design provide sufficient capacity and proper flow pattern to prevent the spread and/or build-up of loose surface and airborne contamination?
Comment: It is not anticipated that the TAN-607A Warm Shop will require control as a radiologically contaminated area and ventilation design is not a considertion in this review.				
☒	☐	☐	6.	Are sources of radiological or mixed waste generation and their disposal methods identified in the facility design?
Comment: The TAN V-Tank Waste Management Plan associated with this project addresses disposal methods for the waste.				
☐	☐	☒	7.	Does the radiological design of the facility comply with criteria established in DOE directives and standards, the INEEL Radiological Control Manual, and applicable federal codes?
Comment: None.				
☐	☒	☐	8.	For modifications to an existing facility, will there be an increase in operations, maintenance, research, inspections, or decommissioning requirements involving the radiological control area(s)?
Comment: Based on the purpose and intent of this facility modification it is anticipated that operations will be minized to the extent practical, excluding routine weekly inspections of the RCRA waste, required fire water system inspections, and periodic use of the TAN 607 Hot Shop cask purge system located on the north wall.				
☐	☐	☒	9.	Is fixed radiological monitoring instrumentation identified and adequate for the proposed facility design or modification?
Comment: The TAN Warm Shop has no fixed radiological instrumentation, RAM or CAM, with remote readout capability. Installation of any such equipment is not anticipated for this project. The placement of temporary area monitoring TLD's, other than those in existence now, may be established in areas adjacent to the Warm Shop at TAN Radiological Engineer discretion.				
☐	☐	☒	10.	Are the change rooms and personnel decontamination facilities sufficient in size and in the proper locations?
Comment: None.				
☒	☐	☐	11.	Have space requirements for anticipated operations, maintenance, production, research and decommissioning in radiological control areas been evaluated?

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Comment: Several drum orientations and shielding configurations/equipment were addressed based on facility layout during the design process to ensure personnel exposure rates are maintained ALARA.				
Yes ☐	No ☒	N/A ☐	12.	For modification(s) to an existing facility, does the work involved making this modification have the potential to exceed ALARA review trigger levels?
Comment: The design review calculations have shown that there will be no significant impact to the plant or personnel during storage of the V-tank sludge materials and ALARA review trigger levels will not be exceeded.				
Yes ☒	No ☐	N/A ☐	13.	Will a new radiation source be created and if so, is there a potential that existing area dose rates will increase?
Comment: Interim storage of the V-tank sludge material will be the direct cause of a change to the existing facility dose rates. The increased dose rate and facility impact were analyzed in-depth and determined to be acceptable with the controls to be implemented. Facility specific dose rate information is included in the V-Tank WMP, Appendix E.				
Yes ☐	No ☐	N/A ☒	14.	Review previous similar jobs, designs and processes with similar hazards. Are controls compatible?
Comment: There are no similar jobs or processes known with which to compare this effort.				